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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,811	01/29/2004	Alexander V. Drynkin	5092	5550
7590 02/08/2007 RICHARD ESTY PETERSON			EXAMINER	
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SHORTENED STATUTOR	Y PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)				
	10/767,811	DRYNKIN ET AL.				
Office Action Summary	Examiner	Art Unit				
	Thomas J. Brahan	3654				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address						
Period for Reply						
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).						
Status						
1) Responsive to communication(s) filed on 30 O	ctober 2006.					
2a)⊠ This action is FINAL . 2b)☐ This	This action is FINAL . 2b) ☐ This action is non-final.					
·	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.						
Disposition of Claims						
4)⊠ Claim(s) <u>2,4-10,12 and 16-19</u> is/are pending in the application.						
4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>2,4-10 and 16-19</u> is/are rejected.	6)⊠ Claim(s) <u>2,<i>4-10 and 16-19</i></u> is/are rejected.					
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/or election requirement.						
Application Papers						
9) The specification is objected to by the Examiner.						
10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).						
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.						
Priority under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).						
a) ☐ All b) ☐ Some * c) ☐ None of:						
1. Certified copies of the priority documents have been received.						
, , ,	2. Certified copies of the priority documents have been received in Application No					
3. Copies of the certified copies of the priority documents have been received in this National Stage						
application from the International Bureau (PCT Rule 17.2(a)).						
* See the attached detailed Office action for a list of the certified copies not received.						
•						
Attachment(s)						
1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) 4) Interview Summary (PTO-413) Paper No(s)/Mail Date.						
3) Information Disclosure Statement(s) (PTO/SB/08) 5) Notice of Informal Patent Application						
Paper No(s)/Mail Date						

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- 1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The specification fails to include a disclosure of a cross beam with two post supports which elevate the cross beam above the bed and platform, now recited in claim 2, lines 14 and 15. This is new matter.
- 2. The drawings are objected to under 37 C.F.R. § 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means for elevating the cross beam, of claim 2 must be shown, or the feature must be canceled from the claims. No new matter may be entered.
- 3. If corrected drawing sheets are submitted to overcome the above objection, they must be in compliance with 37 CFR 1.121(d) and are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).
- 4. If the changes are not accepted by the examiner, because for example introducing new matter, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
- The following is a quotation of the first paragraph of 35 U.S.C. § 112:

 The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
- 6. Claims 2, 4-10, 12 and 16-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification fails to include a disclosure of a cross beam with two post supports which can elevate the cross beam above the bed and platform, as now recited in claim 2, lines 14 and 15. This is new matter.

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7. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which applicant regards as his invention.

- 8. Claims 2, 4-10, 12 and 16-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to how the applicant is considering the posts as having means to elevate the cross beam.
- 9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 10. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

11. Claim 2, as best understood, is rejected under 35 U.S.C. § 102(b) as being anticipated by Shibata et al. Shibata et al shows a robotic tube handler system comprising:

a robotic tube handler having:

- a housing (of front-end system 10) with a perimeter rectangular frame having sides;
- a tube rack bed (under the gripper assembly 42; see figure 2) mounted in the perimeter frame for orthogonal placement of a plurality of tube racks (trays 32), the bed having a seating structure in which multiple tube racks of identical size seat in a predefined array;
- a support platform (drawer assembly 30) mounted in the perimeter frame adjacent the tube rack bed, the support platform having a tube parking holder (STAT locations 36) with a plurality of tube holding locations;

a tube pick-up mechanism having:

a crossbar transport unit (see column 7, lines 35-38) with tracks (rods 74 and 76) located

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on two opposite sides of the frame;

a cross beam (at linear ball slide 68) with two post supports (pillow bearings 70 and 72) wherein the cross beam spans the bed and platform and the two post supports engage the tracks:

a transport assembly with a motor and a drive assembly in engagement with each of the post supports with fore and aft transport of the crossbar transport unit on operation of the motor;

an elevator carriage (slide bracket 66) supported on the cross beam (68) with a transport mechanism having a motor and a drive assembly in engagement with the cross beam with side to side transport of the elevator carriage on the cross beam on operation of the motor (see column 7, lines 35-38);

an elevator assembly;

a pick head unit (tube gripper 40) wherein the elevator assembly has a transport mechanism with a motor (air piston 64) that vertically displaces the pick head unit (40) on operation of the motor, the pick head unit having an actuatable pick head with mechanical pick fingers (arms 60) engageable with a tube; and.

a controller with a control unit (DataLink computer 18) having electronics operationally connected to the drive motors for precision control of X, Y, Z motion of the pick head unit and actuation of the pick head for select engagement and precision transport of tubes in tube racks seated in the bed and tubes held in the tube parking holder on the support platform during sorting operations.

12. Claims 2 and 4, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa et al in view of Evans or Brown et al. Yamakawa et al shows the basic claimed robotic tube handler system comprising:

a robotic tube handler having:

- a housing with a perimeter rectangular frame having sides;
- a tube rack bed (housing rack table 6) mounted in the perimeter frame for orthogonal placement of a plurality of tube racks (racks 8), the bed having a seating structure in which multiple tube racks of identical size seat in a predefined array;
- a support platform mounted in the perimeter frame adjacent the tube rack bed, the support platform having a tube parking holder (specimen-container racks 7 or manual operating racks 9) with a plurality of tube holding locations;
- a tube pick-up mechanism (shifting unit 15) having a cross beam and an elevator with a pick head unit (hand unit 14; and,

a controller with a control unit having electronics operationally connected to the drive motors for precision control of X, Y, Z motion of the pick head unit and actuation of the pick head for select engagement and precision transport of tubes in tube racks seated in the bed and tubes held in the tube parking holder on the support platform during sorting operations.

Yamakawa et al varies from claim 2 as it does not show the details of the tube pick-up mechanism (15) as

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to have is supported at each end by a post support, with each post support engaging the translating motor. However this is conventional. Evans shows a similar robotic gantry with a cross beam having a drive (10 and 10a) at each end, see figure 7. Brown et al shows a similar robotic gantry with a cross beam (120) with two drive motors (140 and 141). It would have been obvious to one of ordinary skill in the art at the time by applicant to have the robotic tube handler of Yamakawa et al moving by having end posts which are each driven for accurate positioning, as taught by Evans or Brown et al. The specimen-container rack (7) has a transport mechanism (2) for transferring tubes to other handlers, as recited in claim 4. Note that the claim does not state that the transport mechanism extends to the other handler.

13. Claims 2 and 4, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Boje et al in view of Evans or Brown et al. Boje et al shows the basic claimed robotic tube handler system comprising:

a robotic tube handler having:

a housing (12) with a perimeter rectangular frame having sides;

a tube rack bed (storage area 28) mounted in the perimeter frame for orthogonal placement of a plurality of tube racks (trays 52), the bed having a seating structure (on chains 54) in which multiple tube racks of identical size seat in a predefined array;

a support platform (at 50) mounted in the perimeter frame adjacent the tube rack bed, the support platform having a tube parking holder (tube rack 46) with a plurality of tube holding locations;

a tube pick-up mechanism (robotic arm 34) having a cross beam, an elevator carriage and a pick head unit, and

a controller (84/86) with a control unit having electronics operationally connected to the drive motors for precision control of X, Y, Z motion of the pick head unit and actuation of the pick head for select engagement and precision transport of tubes in tube racks seated in the bed and tubes held in the tube parking holder on the support platform during sorting operations.

Boje et al varies from claim 2 as it does not show the details of the robotic arm (34) as to have is supported at each end by a post support, with each post support engaging the translating motor. However this is conventional. Evans shows a similar robotic gantry with a cross beam having a drive (10 and 10a) at each end, see figure 7. Brown et al shows a similar robotic gantry with a cross beam (120) with two drive motors (140 and 141). It would have been obvious to one of ordinary skill in the art at the time by applicant to have the robotic tube handler of Boje et al moving by having end posts which are each driven for accurate positioning, as taught by Evans or Brown et al. Boje et al has a shuttle holder (38) with a transport mechanism (36), as frecited in claim 4.

Claims 2 and 4, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen et al (US Patent No 6,374,982) in view of Evans or Brown et al. Cohen et al "982 discloses the basic claimed robotic tube handler system comprising a robotic tube handler having a tube rack bed (30; see Cohen et al US Patent No 6,331,437; incorporated by reference for the details of the tube bed), a tube parking holder (rack 37 and shuttle

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38) with a plurality of tube holding locations, and a tube pick-up mechanism (100) having a cross beam (40) with two supports (812 and 813), an elevator (250) with a pick head unit (104), and a microcontroller. Cohen et al '982 varies from claim 2 as it does not show the details of the housing, as to be rectangular, and as it does not show the details of the drive means for translating the posts (812 and 813). Evans shows a similar robotic gantry with a cross beam having a drive (10 and 10a) at each end, see figure 7. Brown et al shows a similar robotic gantry with a cross beam (120) with two drive motors (140 and 141). As the overall device has a rectangular shape, providing it with a housing with a rectangular perimeter would have been an obvious design expedient, within the level of one of ordinary skill in the art at the time the invention was made by applicant. It would further have been obvious to one of ordinary skill in the art at the time by applicant to have the robotic tube handler of Cohen et al '982 by having the end posts each driven by a motor, for accurate positioning, as taught by Evans or Brown et al. Cohen et al '982 includes a transport mechanism (100) for transferring tubes to other handlers, as recited in claim 4.

- 15. Claims 5, 6 and 19, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al in view of Weyrauch et al. Shibata et al shows the basic claimed robotic tube handler system, as detailed above. It has a bar code reader at an identification station, but varies from claim 5 by not specifying that the bar code is on the bottom of the tube. Weyrauch et al shows a similar identification station which reads the information off the bottom of the tubes. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to have the bar code reader arranged to read a bar code which is on the bottom of the tubes, as to avoid having to reorient the tube to the tube reader, as taught by Weyrauch et al.
- 16. Claims 5, 6 and 19, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa et al in view Evans or Brown et al, as applied above to claim 2, and further in view of Weyrauch et al. Yamakawa et al, as modified, shows the basic claimed robotic tube handler system. It has a bar code reader at an identification station (3), but varies from claim 5 by not specifying that the bar code is on the bottom of the tube. Weyrauch et al shows a similar identification station which reads the information off the bottom of the tubes. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to have the bar code reader arranged to read a bar code which is on the bottom of the tubes, as to avoid having to reorient the tube to the tube reader, as taught by Weyrauch et al.
- 17. Claim 7, as best understood, is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al in view of Weyrauch et al, as applied above to claim 5 and further in view of Hardgrave et al. Shibata et al, as modified, shows the basic claimed robotic tube handler, but varies from claim 7 by using a bar code reader instead of a RFID reader for identifying the tubes. Hardgrave et al shows a similar identification system and teaches that bar code readers and RFID readers are equivalents, see the first paragraph of the summary of the invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the

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robotic tube handler of Shibata et al by substituting a RFID reader for the bar code reader, as these are art recognized equivalents, as taught by Hardgrave et al.

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- 18. Claim 7, as best understood, is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa et al in view of Evans or Brown et al and Weyrauch et al, as applied above to claim 5 and further in view of Hardgrave et al. Yamakawa et al, as modified, shows the basic claimed robotic tube handler, but varies from claim 7 by using a bar code reader instead of a RFID reader for identifying the tubes. Hardgrave et al shows a similar identification system and teaches that bar code readers and RFID readers are equivalents, see the first paragraph of the summary of the invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handler of Yamakawa et al by substituting a RFID reader for the bar code reader, as these are art recognized equivalents, as taught by Hardgrave et al.
- 19. Claim 8, as best understood, is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al in view of Guiremand. Shibata et al shows the basic claimed robotic tube handler, but varies from claim 8 by having the pick head interchangeable with a tube fill unit. Guiremand shows a similar robotic system and teaches uses interchangeable tools, see column 14, lines 3-9. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handler of Shibata et al by arranging the transport mechanism to accept other tools, to increased versatility as taught by Guiremand. Having a tube fill unit as one of the interchangeable tools would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant, as it is a conventional tube handling system tool.
- Claims 9, 12, 16 and 17, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al in view of Ragard. Shibata et al shows the basic claimed robotic tube handler system, as detailed above, but varies from the claims by not having four fingers on the tube pick head. Ragard shows a similar robotic gripper with four fingers. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handling system of Shibata et al by forming its pick head with four fingers, as to grip four sides of the tube for better engagement, as taught by Ragard. The fingers of Shibata et al are slender as to fit between the tubes, as recited in claim 12. The fingers of Ragard have a cam actuator (82), as recited in claims 16 and 17.
- Claims 9, 12, 16 and 17, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa et al in view of Evans or Brown et al, as applied to claim 2 above, and further in view of Ragard. Yamakawa et al, as modified, shows the basic claimed robotic tube handler system, but varies from the claims by not having four fingers on the tube pick head. Ragard shows a similar robotic gripper with four fingers. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handling system of Yamakawa et al by forming its pick head with four fingers, as to grip four sides of

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the tube for better engagement, as taught by Ragard. The fingers of Yamakawa et al are slender as to fit between the tubes, as recited in claim 12. The fingers of Ragard have a cam actuator (82), as recited in claims 16 and 17.

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- Claims 9, 12, 16 and 17, as best understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen et al '982 in view of Evans or Brown et al, as applied above to claim 2, and further in view of Ragard. Cohen et al '982 shows the basic claimed robotic tube handler system, as detailed above, but varies from the claims by not having four fingers on the tube pick head. Ragard shows a similar robotic gripper with four fingers. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handling system of Shibata et al by forming its pick head with four fingers, as to grip four sides of the tube for better engagement, as taught by Ragard. The fingers of Cohen et al '982 are slender as to fit between the tubes, as recited in claim 12. The fingers of Ragard have a cam actuator (82), as recited in claims 16 and 17.
- Claim 18, as best understood, is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al in view of Ragard, as applied above to claim 17, and further in view of Norris et al. Shibata et al, as modified by Ragard, shows the basic claimed robotic tube handler system, but varies from the claims as Ragard has a cylinder, not a solenoid, as the actuation means for the cam actuator. Norris shows a similar robotic gripper and teaches that pneumatic cylinders and solenoids are equivalent finger actuators, see column 8, lines 38-40. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handling system of Shibata et al by using a solenoid instead of a cylinder to actuate the fingers on the gripper, as these are art recognized equivalents, as taught by Norris et al.
- Claim 18, as best understood, is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamakawa et al in view of Evans or Brown et al and Ragard, as applied above to claim 17, and further in view of Norris et al. Yamakawa et al, as modified by Ragard, shows the basic Claimed robotic tube handler system, but varies from the claims as Ragard has a cylinder, not a solenoid, as the actuation means for the cam actuator. Norris shows a similar robotic gripper and teaches that pneumatic cylinders and solenoids are equivalent finger actuators, see column 8, lines 38-40. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the robotic tube handling system of Yamakawa et al by using a solenoid instead of a cylinder to actuate the fingers on the gripper, as these are art recognized equivalents, as taught by Norris et al.
- Applicant argues in the amendment filed October 30, 2006, that the pillow bearings of Shibata et al are not post supports. However the definition of a post is "a piece (as of timber or metal) fixed firmly in an upright position especially as a stay or support", see Merriam-Webster online dictionary, as to have these upright blocks considered as posts or as support posts. Applicant's statement that the tube rack bed of Shibata is not mounted in the perimeter bed is not understood. Clearly the rack bed shown in figure 2 of Shibata et al is within the rectangular housing shown in figure 1 of the reference. Applicant's remaining remarks have been fully considered, but are deemed to be

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persuasive, as the modifications made by the rejections are either just filling out details omitted from the base reference with conventional robot features, or are just substituting one known robot feature for another. The amendment necessitated the new grounds, accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

An inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Brahan whose telephone number is (571) 272-6921. The examiner's supervisor, Ms. Katherine Matecki, can be reached at (571) 272-6951. The fax number for all patent applications is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Questions regarding access to the Private PAIR system, should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas J. Brahan Primary Examiner Art Unit 3654 Page 9